

Title (en)  
**APPARATUS FOR USE WITH A DENSITOMETER**

Publication  
**EP 0284250 A3 19890510 (EN)**

Application  
**EP 88302130 A 19880311**

Priority  
US 3185087 A 19870327

Abstract (en)  
[origin: EP0284250A2] Apparatus for use with a densitometer having a probe (4) with an output and a probe driver (18) for driving the probe includes a loop circuit coupled between the probe output and the probe driver. An amplifying circuit (12) is coupled in the loop circuit to amplify the signal provided by the probe (4). A phase/gain control device (16) is also coupled in the loop circuit between the amplifying device (12) and the probe driver (18). The phase/gain control device (16) controls the loop circuit to provide a loop gain of at least one and a substantially zero degree phase shift between the probe driver (18) and the probe output signal. The amplifying device includes an op-amp which is preferably coupled to a shielded cable (14) carrying the probe output signal. The shield conductor and one input of the op-amp are held at ground potential, and the op-amp acts to hold the centre conductor at ground potential also. With the centre conductor held at ground potential, the output signal from the probe varies with current, not voltage. A resistance in the feedback path of the op-amp converts current changes to voltage changes proportional to the output signal of the probe. Since the centre conductor of the shielded cable varies in current only, the output signal from the probe is insensitive to cable length, cable loading, and cable capacitance.

IPC 1-7  
**G01N 9/00**

IPC 8 full level  
**G01N 9/00** (2006.01)

CPC (source: EP US)  
**G01N 9/002** (2013.01 - EP US)

Citation (search report)  
• [AD] US 4215566 A 19800805 - GHABRAMANI IRAJ [US]  
• [AD] US 4546641 A 19851015 - NGUYEN VAN H [US]  
• [A] GB 1328888 A 19730905 - ITT  
• [A] GB 2001761 A 19790207 - STRAUMANN INST AG

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